

RESPONSE UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 09/857,020

Also, Applicant respectfully requests the Examiner to acknowledge receipt and indicate approval of the drawings filed with the application on May 31, 2001.

Prior Art Rejections

The Examiner maintained the rejection of claims 8-13 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,76,7609 to Saganuma (hereinafter “Saganuma”) in view of U.S. Patent No. 4,833,358 to Suzuki et al. (hereinafter “Suzuki”). Applicant respectfully traverses this rejection in view of the following comments.

Claim 8 among a number of unique features, recites: “if it is determined in (a) that the operation mode is monitor mode and it is determined in (b) that the pulse generator is generating pulses, modifying the operation mode to be frequency setting mode; determining a change in frequency with respect to the pulses; modifying the frequency set value for the device under control based on the change in frequency”. The Examiner alleges that claim 8 is directed to a method of controlling a frequency set value of a device and is obvious in view of the combined teachings of Saganuma and Suzuki.

*Modifying the operation mode to be a frequency setting mode
based on the determinations set forth in claim 1
is not taught or suggested by the combined teachings of Saganuma and Suzuki*

Specifically, the Examiner alleges that since Saganuma discloses a driving state detecting circuit and a frequency setting circuit, one of ordinary skill in the art would know how to set up operation modes for different features with any known inputting mechanism such as a keyboard (see page 3 of the Office Action). In other words, the Examiner alleges that setting the operation mode to the frequency setting mode when the operation mode is set to monitor and the pulse

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generator is generating pulses is within the skill of one of ordinary skill in the art. This position is legally inaccurate.

MPEP § 2143.01 states that “[*f*]act that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish *prima facie obviousness*.” These grounds of rejection merely conclude, without evidentiary support, that setting the specific mode when certain conditions are met involves routine skill.

However, nothing of record indicates that this is actually the case. A general capability of setting operation modes does not teach or suggest *when and which operation mode to set*. Indeed, setting the frequency setting mode when it is determined that the operation mode is the monitor mode and the pulse generator generates pulses, for example, providing an easy and speedy setting of the frequency, is not suggested by the art itself.

Moreover, as evident from the MPEP passages cited above, the rationale given as support for the conclusion of obviousness, namely that setting operation modes for different features is well known, “especially when the specifics are not disclosed,” is clearly contrary to the law. Disclosure, not non-disclosure, is the foundation of any *prima facie* determination of obviousness. Regardless of the context, the prior art must, in all circumstances, suggest the desirability of the modification before the resultant modification is rendered obvious. MPEP § 2143.01.

Determining a change in frequency with respect to the pulses is not taught or suggested by the combined teaching of Saganuma and Suzuki

Specifically, the Examiner acknowledges that Saganuma does not teach or suggest the unique feature of *determining a change in frequency with respect to the pulses*. The Examiner,

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however, alleges that Suzuki cures the deficient teachings of Saganuma. In response to Applicant's arguments presented in the Amendment under 37 C.F.R. § 1.111 dated October 26, 2004, the Examiner alleges that Suzuki discloses a frequency determination circuit including an oscillating circuit the output frequency of which is changed according to the output level of the pulse-voltage converting circuit, where the frequency signal is determined by the output frequency of the oscillation circuit. The Examiner further states that "it would have been obvious to one of ordinary skill in the art....that the frequency determination circuit along with pulse voltage converting circuit *is a functional equivalent* and *could be* used for determination of a change in frequency with respect to pulse," emphasis added (see page 2 of the Office Action). This grounds of rejection is technically and legally inaccurate for at least the following reasons.

The Examiner appears to rely on Fig. 3 of Suzuki (*see* page 4 of the Office Action). Suzuki only teaches having a drive circuit with a) a detector detecting electrodes, b) a level comparator comparing the detected electrode voltage with a reference voltage VA, c) an exclusive OR circuit (EX-OR), which receives the outputs of the level comparator 2 and a comparator 13 that functions as a phase comparator, d) a low-pass filter which filters the output of the EX-OR circuit, and a voltage controlled oscillator (VCO) which produces a signal having a duty factor of 50% at a frequency corresponding to an input voltage, and which has an input terminal thereof connected to the output terminal of the low-pass filter 4. In addition, a phase shifter 6 is provided, which has an input terminal 6-1 connected to the output of the VCO 5 and produces two signals having a frequency equal to one half of the output of the VCO at phases of

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0 and 90 degrees. The EX-OR 3, low-pass filter 4 and VCO 5 form a phase-locked loop (PLL) (Fig. 3; lines 17 to 51).

Suzuki, however, only discloses a waveform of the signal being applied to a phase comparator 13 and then converted to a logic level voltage, which is applied to the other input terminal of the EX-OR 3. Since the pulses applied to the EX-OR 3 have the same frequencies and same phases as those of the waveforms at the electrodes 1-1 and 1-3, respectively, the larger the phase difference between the input waveforms is, the larger is the duty factor of the output of the EX-OR 3, which is supplied to the low-pass filter 4. The low-pass filter 4 produces a voltage level corresponding to the duty factor of the EX-OR 3 and supplies it to the VCO 5 that produces a pulse at a frequency corresponding to the input voltage level. (col. 4, lines 28 to 41).

First, it is respectfully pointed out that contrary to the Examiner's allegation, one of ordinary skill in the art would not have found it obvious to use a phase comparator for a change in frequency calculation. As previously explained in the Amendment under 37 C.F.R. § 1.111 filed October 26, 2004, comparing frequencies and phases are not functionally equivalent. Comparing phases is comparing position of the peaks and the troughs with a reference value, whereas comparing frequencies involves measuring the number of times that a repeated event occurs per a particular unit of time. Clearly, comparing phases, as taught by Suzuki, is not functionally equivalent to comparing frequencies. Moreover, a phase comparator cannot be used for determining a change of frequency.

Finally, the Examiner appears to allege that the Suzuki's frequency determination circuit is somehow equivalent to determining a change in frequency with respect to the pulses. Suzuki's

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frequency determination circuit, however, only determines the frequency of the periodic signals in accordance with the detected phase shift (col. 13, lines 15 to 20). No change in frequency is detected or determined. Moreover, a frequency detecting circuit, as the one taught by Suzuki, is not functionally equivalent and cannot be used to determine a change in frequency. Suzuki's frequency determination circuit simply detects frequency and not the change in frequency.

For at least these exemplary reasons, independent claim 8 is patentable over Saganuma in view of Suzuki, the combined teachings of which fails to teach or suggest "if it is determined in (a) that the operation mode is monitor mode and it is determined in (b) that the pulse generator is generating pulses, modifying the operation mode to be frequency setting mode; determining a change in frequency with respect to the pulses; modifying the frequency set value for the device under control based on the change in frequency". Therefore, it is appropriate and necessary for the Examiner to withdraw this rejection of claim 8.

Claims 9 and 10 are patentable over the proposed combination at least by virtue of their dependency on claim 8.

In regard to independent claims 11 and 13, it is respectfully submitted that the subject matter of these claims is patentable for at least the same reason as set forth above in regard to claim 8. For at least this exemplary reason, therefore, claims 11-13 are patentable over the proposed combination of Saganuma and Suzuki et al. and the rejection thereto should be withdrawn.

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Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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